

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A material of the general formula $M_6C_yH_z$, wherein M designates a transition metal, C designates a chalcogen, H designates a halogen, and wherein y and z may be of from 0 to 10 such that $8.2 < y+z < 10$, ~~grown~~ wherein the material is in the form of nanowires, nano-ropes, nanorods, whiskers or needles ~~and obtainable by a process comprising the steps of mixing the constituent elements in the desired mass ratio, placing them in an appropriate container, evacuating the container and heating it to a temperature above 1000°C for a predetermined length of time.~~

2. (Original) The material according to claim 1, wherein M is a transition metal selected from the group consisting of Mo, W, V, Ti, Ta, Nb, Zn, Hf, Re and Ru.

3. (Currently amended) The material according to claim 1 ~~or 2~~, wherein M represents a mixture of two or more transition metals.

4. (Currently amended) The material according to ~~preceding claims~~ claim 1, wherein C = S, Se, Te.

5. (Currentl y amended) The material according to ~~preceding claims~~ claim 1, wherein C represents a mixture of two or more chalcogens.

6. (Currently amended) The material according ~~any of the preceding claims to~~ claim 1, wherein the halogen H = I, Br, Cl or F.

7. (Currently amended) The material according to ~~preceding claims~~ claim 1, wherein H represents a mixture of two or more halogens.

8. (Currently amended) The material according to ~~any of the preceding claims~~ claim 1, wherein $0 < y < 10$, $0 < z < 10$ and $8.2 \leq y+z < 10$.

9. (Currently amended) The material according to ~~any of the preceding claims~~ claim 1, wherein H ~~may be~~ has a property of being replaced by an ion elected from the group consisting of elements in the groups III-VIII.

10. (Currently amended) The material according to ~~any of the preceding claims~~ claim 1, additionally containing intercalated or interstitial ions, atoms or molecules, selected from the group consisting of alkali metals, alkaline-earth metals, transition metals, elements belonging to groups III-VIII and any organic donors or acceptors.

11. (Currently amended) The material according to ~~any of the preceding claims~~ claim 1, ~~exhibiting~~ wherein the material has a substantially circular cross-section.

12. (Currently amended) The material according to ~~any of the preceding claims~~ claim 1, ~~which~~ wherein the material is superconducting.

13. (Currently amended) The material according to ~~any of the preceding claims~~ claim 1, ~~which~~ wherein the material is metallic or semiconducting.

14. (Currently amended) A method for the production of a material according to ~~any of the claims~~ claim 1 to 11, ~~which comprises the steps of the method comprising~~ (i) mixing of ~~the~~ individual constituent elements, (ii) heating the individual constituent elements in a sealed container under reduced pressure, and (iii) heating the individual constituent elements above a temperature of 1000 °C or more for ~~any~~ a duration of time.

15. (Currently amended) The method according to claim 11, wherein the at least some of the constituent elements ~~themselves~~ are replaced by one or more replacing elements or compounds of these elements such as MoS₂ for example.

16. (Currently amended) ~~Use of~~ A method comprising incorporating a material according to ~~any of the preceding claims~~ claim 1 ~~[[,]]~~ in electronic, chemical, optical or mechanical applications.

17. (Currently amended) The ~~use of a material~~ method according to ~~any of the claims claim 1 to 13~~ as 16, wherein the application is a catalyst in dry form or in suspension or as a catalytic component.

18. (Currently amended) The ~~use of a material~~ method according to claim 16, wherein said ~~use of said material~~ method is selected from the group consisting of a ~~use incorporating~~ in a field-emission device, in a superconducting application, in a proximity-coupled network, in a quantum interference network, in devices incorporating said material in 2-, 3-, 4- or multi-terminal configuration, and a use for enhancing electrical, optical, magnetic, mechanical and tribological properties of polymers and glasses by incorporating said material in said polymers and glasses.

19. (Currently amended) The ~~use of a material~~ method according to claim 16, said material ~~being used as~~ having a property of a lubricating agent, ~~optionally in combination with one or more further compounds, in particular oils.~~

20. (Currently amended) A method of varying ~~the~~ a material characteristics of a material according to ~~any of the claims claim 1 to 13~~, said method comprising: ~~the steps of~~ selecting composition parameters y and z, and/or incorporating dopants or substituents in said material.

21. (Currently amended) An electric device comprising:
at least one material or a material bundle comprising said at least one material arranged on a substrate, said at least one material being a material according to ~~any of the claims claim 1 to 13~~; and

at least one contact arranged on said substrate and passing over said at least one material or the material bundle, said at least one contact being connected with or connectable to a circuitry of the device.

22. (Currently amended) The device of claim 21, wherein said device is adapted to detect ~~detecting~~ physical or chemical influences acting on said at least one material or the material bundle and/or said at least one contact.

23. (Original) The device of claim 22, said device being adapted to detect physical or chemical influences selected from the group consisting of influences due to molecules attaching to and/or coming into contact with said at least one material or material bundle or said contact(s), light of different wavelengths, and mechanical influences.

24. (Currently amended) A method of arranging a material according to ~~any of the claims~~ claim 1 ~~to 13~~ in a electric device, said method comprising: ~~the steps of~~ arranging at least ~~one~~ the material or a material bundle comprising said material on a substrate;
providing said ~~at least one~~ material or the material bundle with one or more contacts, at least one of said one or more contacts being in connection with or connectable to a circuitry of said electric device.

25. (Currently amended) An array comprising:
at least one material or a material bundle comprising said at least one material, said at least one material being a material according to ~~any of the claims~~ claim 1 ~~to 13~~, said at least one material or the material bundle being provided on a substrate, the length axis of said at least one material or the material bundle extending essentially non-parallel to said substrate, and
said at least one material or the material bundle being provided with a molecule on ~~the~~ an end distant from said substrate.

26. (Currently amended) The array of claim 25, wherein said at least one material or the material bundle is attached to said substrate or attached to a template arranged on said substrate.

27. (Currently amended) The array of claim 25, wherein said molecule is attached via a particle, preferably via a gold particle, to said at least one material or the material bundle.

28. (Currently amended) ~~Use of~~ A method comprising incorporating an array according to ~~any of the claims claim~~ claim 25 ~~to 27~~ in a device for detecting ~~[[a]]~~ binding of a molecule to said molecule provided on said at least one material or the material bundle.

29. (Currently amended) A method of arranging an array, said method comprising:

providing at least one material or a material bundle comprising said at least one material, said material being a material according to ~~any of the claims claim~~ claim 1 ~~to 13~~,

arranging said at least one material or the material bundle on a substrate or on a template on a substrate, the length axis of said material or the material bundle extending essentially non-parallel to the surface of said substrate and/or said template on said substrate, and attaching a molecule to ~~the~~ an end of said at least one material or the material bundle remote from said substrate.

30. (Currently amended) ~~Use of~~ A method comprising incorporating a material according to ~~any of the claims claim~~ claim 1 ~~to 13~~ in a device for electric applications, said material being connected to or integrated in an electric circuitry.

31. (Currently amended) ~~Material~~ A material according to ~~any of the claims claim~~ claim 1 ~~to 13~~, said material being a nanowire, nano-rope, nanorod, whisker or needle ~~provided~~ having a molecule on one end thereof ~~with a molecule~~.

32. (Currently amended) ~~Material~~ The material according to claim 31, said material being a sensor.

33. (Currently amended) ~~Composition~~ A composition comprising a material according to ~~any of the claims claim~~ claim 1 ~~to 13~~ and one or more materials selected from the group

consisting of a superconducting compound, a lubricating compound, oil, polymer, glass, and a gaseous compound.

34. (New) The material of claim 1, wherein M is molybdenum.

35. (New) The material of claim 1, wherein the material is obtainable by a process comprising mixing constituent elements in a desired mass ratio, placing the constituent elements in a container, evacuating the container and heating the constituent elements to a temperature above 1000°C for a predetermined length of time.

36. (New) The method of claim 15, wherein the one or more replacing elements or compounds comprises MoS₂.